

**REMARKS**

These Remarks are submitted under 35 U.S.C. § 132 and 37 C.F.R. § 1.111 in response to the Office Action mailed December 2, 2003. Claims 1-17 remain in this application.

**Summary of the Examiner's Action and Applicants' Response**

The Examiner has rejected Claims 1, 9, 15, and 16 under 35 U.S.C. 103(a) as being obvious based on Eng, Jr., et al. (U.S. Patent No. 4,857,878) in view of Carbone, et al. (European Patent No. 0 933 789 A2). The Examiner has rejected Claims 2 and 4 – 6 under 35 U.S.C. 103(a) as being obvious based on Eng, Jr., et al. in view of Carbone, et al., and further in view of Tobben, et al. (U.S. Patent No. 4,596,974). Claim 3 has been rejected under 35 U.S.C. 103(a) as being obvious based on Eng, Jr., et al. in view of Carbone, et al., and further in view of Dobberstein (U.S. Patent No. 4,549,130). The Examiner has rejected Claims 7 and 8 under 35 U.S.C. 103(a) as being obvious based on Eng, Jr., et al. in view of Carbone, et al. and Tobben, et al., and further in view of Equi, et al. (U.S. Patent No. 4,939,623). Claims 10-14 have been rejected under 35 U.S.C. 103(a) as being obvious based on Tobben, et al. in view of Equi, et al. The Examiner has allowed Claim 17. Claims 1-17 remain pending.

**Response to Rejection of Claims 1, 9, 15, and 16**

The Examiner has rejected Claims 1, 9, 15, and 16 under 35 U.S.C. 103(a) as being obvious based on Eng, Jr., et al. in view of Carbone, et al. The Examiner states that Eng, Jr., et al. does not disclose the recess structure of Claim 1, but that Carbone, et al. does teach such a recess structure arrangement. The Examiner states that it would be obvious to one of ordinary skill at the time the invention was made to use the recess design of Carbone, et al. in the transformer taught in Eng, Jr. et al. for the purpose of joining the bobbin structures together and providing air path for the device. Applicant respectfully disagrees.

Eng, Jr., et al. discloses an "outer modular transformer bobbin 200 having primary windings 218 formed thereon, an inner modular transformer bobbin 202 having secondary windings 220 thereon and first and second ferrite core halves 102 and 103 surrounding both bobbins." (See FIGs. 2 and 3 and Col. 2, lines 33-41). Eng, Jr., et al. discloses positioning the

inner and outer modular transformer bobbins such that the inner transformer bobbin is inserted into the outer transformer bobbin with the secondary windings surrounded by the primary windings. (Abstract).

Carbone, et al. discloses a transformer having a primary winding PCB 3 disposed in the center of a bobbin and sandwiched between two PCB 5 halves of a secondary winding. (FIGs. 1 and 2) Carbone, et al. discloses grooves 7 on the surface of an upper insulation shell 1 and one or more frames 8 on the upper surface of an insulation shell 2, with the frames 8 being introduced into respective grooves 7, to avoid "unwanted and dangerous electrical contact between the boards 3 and 5." (See FIGs. 1-2 and Col. 3, lines 10-27). Thus, the structure of the transformer taught in Eng, Jr., et al., having an inner bobbin having secondary windings thereon that is inserted within an outer bobbin having a primary winding thereon, is very different from the PCB winding and bobbin arrangement of the transformer disclosed in Carbone, et al. Moreover, Eng, Jr., et al. does not teach or suggest a structure having PCB winding coils. Consequently, there would be no suggestion or motivation to combine the teachings of Carbone, et al. with the teachings of Eng, Jr., et al. Applicant respectfully submits that the Examiner has impermissibly relied on the hindsight provided by the present invention in order to argue that Claim 1 is obvious in view of a combination of the cited references.

Even if there were a suggestion or motivation to combine the teachings of Carbone, et al. with the teachings of Eng, Jr., et al., Applicant respectfully submits that the combination would not teach the structure claimed in Claim 1. For the present invention, among other things, the tubular portion is designed to increase the creepage distance between the first and second bobbin members, and the core passing through the bobbin members. (Page 10, lines 21-23) As claimed in Claim 1, "the first bobbin member is disposed adjacent to the second bobbin member and is partially enclosed by the flange, said primary and secondary windings respectively wound about said first and second body portions, and wherein the first and second hollow regions are **shaped to receive a core inserted therewithin**." (Emphasis added). As seen in FIG. 1 in Carbone, et al. the core 10 is comprised on two E shaped halves 1001 and 1002. The portions of these core halves surround, but do not pass through, grooves 7 or frame 8. Thus, the structure in Carbone, et al. is not designed to isolate the windings from the core, as is the structure as claimed in Claim 1. Applicant respectfully submits that any hollow region that might be formed by structures 7 and 8 in Carbone, et al. are not shaped to receive a core inserted **therewithin** as claimed in Claim

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1. Consequently, in contrast to the present invention, Carbone, et al. does not describe a transformer designed to increase creepage distance between windings wound around the bobbins and the core. By contrast, the transformer and especially, the structures 7 and 8, in Carbone, et al. are designed for a different purpose, for "the function of separating the printed circuit board 3 of the primary coil, equipped with plate insulators 4, from the printed circuit board 5 of the secondary coil ..." (Col. 3, lines 1-4).

For the above reasons, Applicant respectfully submits that Claim 1 is not obvious based on Eng, Jr., et al. in view of Carbone, et al. Claim 9 depends from Claim 1 and is respectfully submitted as being non-obvious for the same reasons stated above for Claim 1. Claims 15 and 16 include the recess structure and first and second hollow regions shaped to receive a core inserted therewithin as claimed in Claim 1. Claims 15 and 16 are respectfully submitted therefore, as being non-obvious for the same reasons stated above for Claim 1.

#### Response To Rejection of Claims 2 and 4 – 6

The Examiner has rejected Claims 2, 4, and 6 under 35 U.S.C. 103(a) as being obvious based on Eng, Jr., et al. in view of Carbone, et al., and further in view of Tobben, et al. Claims 2 and 4 – 6 are respectfully submitted as being non-obvious based on Eng, Jr., et al. and Carbone, et al. for the same reasons stated above for Claim 1.

Applicant respectfully submits that the structure shown in Tobben, et al. is quite different from that of the present invention and the structure disclosed in Eng, Jr., et al. Among other things, Tobben, et al. discloses having a resilient device 49 (shown in FIG. 3) for securing an E-shaped coil having a tubular center portion. The present invention is designed to obviate the need for any such resilient securing devices as taught in Tobben, et al. Applicant respectfully submits that there is no suggestion or motivation to combine these references, and even if there were, the references could not be combined to achieve the structure claimed in Claim 2 and 4 – 6. For the above reasons, Applicant respectfully submits that Claims 2, 4, 5, and 6 are not obvious in view of Eng, Jr., et al., Carbone, et al., and Tobben, et al.

#### Response To Rejection of Claim 3

The Examiner has rejected Claim 3 based on the combination of Eng, Jr., et al. and Carbone, et al., and further in view of Dobberstein. Claim 3 depends from Claim 1 and is

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respectfully submitted as being non-obvious based on Eng, Jr., et al. and Carbone, et al. for the same reasons stated above for Claim 1.

Dobberstein teaches a concentric shield that covers the entire length of a single bobbin sleeve. The Examiner states that the claimed shape of the shield would be an obvious design choice. Applicant disagrees. The bobbin and shield shape taught in Dobberstein are substantially different from that claimed in Claim 3. Applicant respectfully submits that the Examiner has impermissibly relied on the hindsight provided by the present invention in order to argue that Claim 3 is obvious in view of a combination of the cited references. For the above reasons, Applicant respectfully submits that Claim 3 is not obvious in view of Eng, Jr., et al., Carbone, et al., and Dobberstein.

#### **Response To Rejection of Claims 7 and 8**

The Examiner has rejected Claim 7 and 8 based on the combination of Eng, Jr., et al. in view of Carbone, et al. and Tobben, et al. and further in view of Equi, et al. Claims 7 and 8 depends from Claim 2 and are respectfully submitted as being non-obvious based on Eng, Jr., et al. and Carbone, et al. for the same reasons stated above for Claim 2.

Equi, et al. discloses a PCB disposed along the common axis (FIGs. 2 and 3). The Examiner states that the specific location/arrangement of the mounting structure would have been an obvious design consideration based upon the environment/application use. Applicant disagrees. None of the cited references teach or suggest the claimed structure such that the PCB is disposed as recited in Claims 7 and 8. Applicant respectfully submits that the Examiner has impermissibly relied on the hindsight provided by the present invention in order to argue that Claims 7 and 8 are obvious in view of a combination of the cited references. For the above reasons, Applicant respectfully submits that Claims 7 and 8 are not obvious based on Eng, Jr., et al. in view of Carbone, et al. and Tobben, et al. and further in view of Equi, et al.

#### **Response To Rejection of Claims 10-14**

Claims 10-14 have been rejected under 35 U.S.C. 103(a) as being obvious based on Tobben, et al. in view of Equi, et al. Applicant respectfully disagrees. Claim 10 recites a structure having a PCB that is disposed parallel to the walls of the first bobbin member and perpendicular to the common axis. By contrast, Equi, et al. shows a PCB disposed along the

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common axis. There is no suggestion or motivation in the cited references to have a PCB structure arranged as claimed in Claim 10. Applicant respectfully submits that the Examiner has impermissibly relied on the hindsight provided by the present invention in order to argue that Claim 10 is obvious in view of a combination of the cited references. For the above reasons, Applicant respectfully submits that Claim 10 is not obvious based on Tobben, et al. in view of Equi, et al. Claims 11-14 depend from Claim 10 and are respectfully submitted as being non-obvious for the same reasons stated above for Claim 10.

Based on the above, Applicant respectfully submits that all pending Claims, Claims 1-17, in the present application are in condition for allowance. Such allowance is respectfully solicited. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (650) 739-2800.

Respectfully submitted,



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